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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/706,583

11/12/2003

James G. Blencoe

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EXAMINER

LEUNG, JENNIFER A

ART UNIT

PAPER NUMBER

1764

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/20/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/706,583

Applicant(s)

BLENCOE ET AL.

Examiner

Jennifer A. Leung

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 12-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-31 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Jennifer A. Leung  
3/15/2007

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2-17-04; 2-18-05
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of Group I, claims 1-11, in the reply filed on December 29, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 12-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Mower (US 2,630,371).

Please note that “system” claims are treated as “apparatus” claims.

Regarding claims 1 and 2, Mower (FIG. 4) discloses an apparatus comprising: a first reaction chamber (i.e., tank **31**) and a second reaction chamber (tank **32**). The expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim, *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969); and the inclusion of a material or article worked upon by a structure being claimed does not impart patentability to the claims, *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935);

Art Unit: 1764

*In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Thus, in claim 1, the limitations with respect to “a gas stream containing carbon dioxide”, the reaction occurring in the first reaction chamber “for reacting a metal silicate with a caustic material to produce a hydroxide of the metal”, the reaction occurring in the second reaction chamber “for contacting the metal hydroxide with the gas stream containing the carbon dioxide,” and the “carbonate of the metal” produced by the apparatus, add no further patentable weight to the claim. Similarly, in claim 2, the recitation that “the gas stream is a flue gas” adds no further patentable weight to the claim.

Regarding claim 3, Mower (FIG. 2) discloses an apparatus comprising: a reactor (i.e., tank 10). The expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969), and the inclusion of a material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935); *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Thus, the “metal silicate”, the “carbon dioxide”, the reaction occurring within the reactor “for converting the metal silicate to a metal carbonate and silica with the use of a caustic material, and with the use of the carbon dioxide,” and the “metal carbonate and silica” produced by the apparatus, have not been given patentable weight.

Regarding claim 4, the apparatus of Mower structurally meets the claim because the metal silicate feedstock of magnesium silicate and the metal carbonate product of magnesite are not considered elements of the apparatus.

Regarding claims 5 and 6, the apparatus of Mower structurally meets the claims because the respective purity levels of the magnesite and silica products are considered a process

Art Unit: 1764

limitation, and the magnesite and silica products are not considered an element of the apparatus.

Regarding claim 7, the apparatus of Mower structurally meets the claim because the carbon dioxide reactant is not considered an element of the apparatus.

Regarding claims 8, 10 and 11, Mower (FIG. 2) discloses an apparatus comprising: a reactor (i.e., tank 10) and apparatus for removing a useful metal (i.e., primary separation 18, secondary separation 21), said apparatus being located prior to and subsequent to the reactor.

The expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969), and the inclusion of a material or article worked upon by a structure being claimed does not impart patentability to the claims, *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935); *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Therefore, the “rock containing the useful metal and a metal silicate”, the “carbon dioxide”, the reaction occurring within the reactor “for converting the metal silicate to a metal carbonate, with the use of a caustic material, and with the use of the carbon dioxide”, the “metal carbonate” produced by the apparatus, and the “useful metal” produced by the apparatus, add no further patentable weight to the claims.

Regarding claim 9, the apparatus of Mower meets the claim because the rock feedstock of serpentine and the useful metal of magnetite are not considered elements of the apparatus.

Instant claims 1-11 structurally read on the apparatus of Mower.

4. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Donaldson (US 3,112,994).

Please note that “system” claims are treated as “apparatus” claims.

Art Unit: 1764

Regarding claims 1 and 2, Donaldson (FIG. 1) discloses an apparatus comprising: a first reaction chamber (i.e., a first compartment 40) and a second reaction chamber (i.e., a second compartment 40). The expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim, *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969); and the inclusion of a material or article worked upon by a structure being claimed does not impart patentability to the claims, *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935); *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Thus, in claim 1, the limitations with respect to “a gas stream containing carbon dioxide”, the reaction occurring in the first reaction chamber “for reacting a metal silicate with a caustic material to produce a hydroxide of the metal”, the reaction occurring in the second reaction chamber “for contacting the metal hydroxide with the gas stream containing the carbon dioxide,” and the “carbonate of the metal” produced by the apparatus, add no further patentable weight to the claim. Similarly, in claim 2, the recitation that “the gas stream is a flue gas” adds no further patentable weight to the claim.

Regarding claim 3, Donaldson discloses an apparatus comprising: a reactor (i.e., the vessel shown in FIG. 1). The expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Also, inclusion of a material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935); *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Therefore, the “metal silicate”, the “carbon dioxide”, the reaction occurring within the reactor “for converting the metal silicate to a metal carbonate and silica with the use

Art Unit: 1764

of a caustic material, and with the use of the carbon dioxide,” and the “metal carbonate and silica” produced by the apparatus have not been given patentable weight.

Regarding claim 4, the apparatus of Donaldson structurally meets the claim because the metal silicate feedstock of magnesium silicate and the metal carbonate product of magnesite are not considered elements of the apparatus.

Regarding claims 5 and 6, the apparatus of Donaldson structurally meets the claims because the respective purity levels of the magnesite and silica products are considered a process limitation, and the magnesite and silica products are not considered an element of the apparatus.

Regarding claim 7, the apparatus of Donaldson structurally meets the claim because the carbon dioxide reactant is not considered an element of the apparatus.

Instant claims 1-7 structurally read on the apparatus of Donaldson.

5. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Scofield et al. (US 1,494,029).

Please note that “system” claims are treated as “apparatus” claims.

Regarding claims 1 and 2, Scofield et al. discloses an apparatus comprising: a first reaction chamber (i.e., labeled “autoclave”; see figure) and a second reaction chamber (i.e., labeled “carbonator”; see figure). The expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim, *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969); and the inclusion of a material or article worked upon by a structure being claimed does not impart patentability to the claims, *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935); *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Therefore, in claim 1, the limitations with respect to “a gas stream containing

Art Unit: 1764

carbon dioxide”, the reaction occurring in the first reaction chamber “for reacting a metal silicate with a caustic material to produce a hydroxide of the metal”, the reaction occurring in the second reaction chamber “for contacting the metal hydroxide with the gas stream containing the carbon dioxide,” and the “carbonate of the metal” produced by the apparatus add no further patentable weight to the claim. Similarly, in claim 2, the recitation that “the gas stream is a flue gas” adds no further patentable weight to the claim.

In any event, Scofield (see figure) further discloses that the first reaction chamber (i.e., the autoclave) is used for reacting a metal silicate (i.e., feldspar) with a caustic material (i.e., caustic potash), and the second reaction chamber (i.e., the carbonator) is used for contacting the product stream from the first reaction chamber with a gas stream containing carbon dioxide.

Regarding claim 3, Scofield et al. discloses an apparatus comprising: a reactor (i.e., the “autoclave”; the “carbonator”; see Figure). The expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Also, inclusion of a material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935); *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Therefore, the “metal silicate”, the “carbon dioxide”, the reaction occurring within the reactor “for converting the metal silicate to a metal carbonate and silica with the use of a caustic material, and with the use of the carbon dioxide,” and the “metal carbonate and silica” produced by the apparatus add no further patentable weight to the claim.

In any event, Scofield et al. (see figure) further discloses a supply of metal silicate (i.e., feldspar); a source of carbon dioxide (i.e., carbon dioxide from a carbon dioxide plant), a metal



Art Unit: 1764

carbonate product (i.e., at the calcium carbonate storage, to further treatment or sales; at the potassium bi-carbonate storage, to sales) and a silica product (i.e., at the silica storage, to sales).

Regarding claim 4, the apparatus of Scofield et al. structurally meets the claim because the metal silicate feedstock of magnesium silicate and the metal carbonate product of magnesite are not considered elements of the apparatus.

Regarding claims 5 and 6, the apparatus of Scofield et al. structurally meets the claims because the respective purity levels of the magnesite and silica products are considered a process limitation, and the magnesite and silica products are not considered an element of the apparatus.

Regarding claim 7, the apparatus of Scofield et al. structurally meets the claim because the carbon dioxide reactant is not considered an element of the apparatus.

Regarding claims 8, 10 and 11, Scofield et al. (see figure) discloses an apparatus comprising: a reactor (i.e., the “autoclave”, the “carbonator”); and apparatus for removing a useful metal from a rock (i.e., crushers and screens located prior to the reactor; also, rotary vacuum filters located subsequent to the reactor). The expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Also, the inclusion of a material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935); *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963). Therefore, the “rock containing the useful metal and a metal silicate”, the “carbon dioxide”, the reaction occurring within the reactor “for converting the metal silicate to a metal carbonate, with the use of a caustic material, and with the use of the carbon dioxide”, the “metal carbonate” produced by the apparatus, and the “useful

Art Unit: 1764

metal” produced by the apparatus, add no further patentable weight to the claims.

In any event, Scofield et al. further discloses a supply of rock containing a useful metal and a metal silicate (i.e., feldspar); a source of carbon dioxide (i.e., carbon dioxide, from a carbon dioxide plant), a stream of metal carbonate product (i.e., at calcium carbonate storage, to further treatment or sales; at potassium bi-carbonate storage, to sales), and a stream of useful metal product (i.e., at alum and aluminum sulfate storage, to sales; at silica storage, to sales).

Regarding claim 9, the apparatus of Scofield et al. meets the claim because the rock feedstock of serpentine and the useful metal of magnetite are not elements of the apparatus.

Instant claims 1-11 structurally read on the apparatus of Scofield et al.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would


Application/Control Number: 10/706,583

Page 10

Art Unit: 1764

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer A. Leung  
March 15, 2007

A handwritten signature in black ink that reads "Jennifer A. Leung". The signature is written in a cursive style with a large, stylized "J" and "L".